

**Animal Health**
Fact Sheet

UNDERSTANDING BULL BREEDING SOUNDNESS EXAMS

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Controversy still exists about Breeding Soundness Examinations (BSE) and what they can and cannot do. At times they are not used because of a lack of understanding of their value while at other times they are used with unrealistic expectations. First, BSE is performed to identify bulls with reduced fertility not just to find those which are sterile. Very few bulls are sterile but a significant percent have reduced fertility.

A second important point is that a BSE is like a “snapshot” in time of the reproductive status of the bull. Even a bull classed as “Satisfactory” does NOT mean he will always be an acceptable breeder. The reverse could also be true for some conditions. Semen production takes about two months, so the semen used on the first day of the breeding season was started into production about 60 days prior. Even heavy breeding use does not speed up the process of sperm production.

A BSE starts with a physical examination of the bull. This includes the detection of unsoundness in feet, legs and eyes, etc., that would decrease the ability of a bull to travel and breed cows. It also includes examining the penis and testicles, measuring the scrotal circumference and examining the accessory sex organs by rectal palpation. Next a sample of semen is collected, usually by electroejaculation. A sub-sample is evaluated on a warm microscope slide for motility. Another sub-sample is placed on a slide and stained to determine the percentage of sperm having normal and abnormal morphology.

This procedure does not evaluate a bull’s ability to breed nor his breeding behavior (such as libido). Some bulls that receive a “Satisfactory” BSE classification are ineffective as breeders because they are incapable of mounting and breeding a cow or because they have low sex drive. Bulls should be observed in the act of breeding to evaluate these behaviors.

In recent years we have moved more and more toward the use of yearling bulls. There are both economic and herd health reasons for using them. Nevertheless, producers must expect a lower percentage of yearling bulls to be satisfactory breeders. Testing bulls that are only 11–13 months of age does identify bulls that reach puberty early. But some bulls do not reach puberty until they are 15 or 16 months of age or older. It is not correct to base the potential fertility of late maturing bulls on an early semen test. It is acceptable to test bulls at 11–13 months of age and identify those that are satisfactory breeders at that age. Bulls which do not pass the early test should not be culled but should be rechecked every 3–4 weeks for a few months. With additional time, many of these bulls will become “Satisfactory Breeders” on a later examination. Sexual

maturity cannot be predicted entirely from body weight nor from scrotal circumference. Both of these are good indicators, but some bulls of high weight and with a large scrotal circumference will still have poor quality semen. Other bulls may produce semen that is of poor quality even after they reach maturity.

A 1992 change in the scoring system used for breeding soundness examinations has decreased the percentage of bulls classed as “Satisfactory.” In the updated scoring system, a bull must meet minimum criteria for scrotal circumference, sperm motility and sperm morphology (shape) to be classed as satisfactory. In the past the total BSE score was the summation of the points earned for motility, morphology and scrotal circumference. A bull with an especially large scrotal circumference, for his age, could pass the exam even though the motility or morphology was poor. The new classification system is an improvement but it also means that about 7% more bulls are classed lower than “Satisfactory.” With this new system it appears that producers must expect about 20% of yearling bulls to fail the BSE. However, as stated previously, if these bulls are rechecked at an older age, many of them will be satisfactory. Only in exceptional cases should a bull be classed as an “Unsatisfactory Potential Breeder” on the basis of one BSE. He should usually be classed as “Classification Deferred” and then be re-examined 3-4 weeks later. The exception to this rule would be for problems such as only one testicle present, etc.; things which will not change with time.

Individual veterinarians may be using different systems to classify breeding soundness evaluations. This may cause some confusion, especially when a bull is tested by one veterinarian and retested by another. All veterinarians should have changed to the new “minimum threshold” system by now, but a few have not. A few evaluators use only the sperm motility to evaluate the semen rather than to also examine sperm morphology. Again, the system using only the motility measure will be less strict and the test results may appear to contradict the classification done by a previously examining veterinarian.

Other points for producers planning to have BSE’s done on their bulls include:

- Schedule the exam for near the beginning of the breeding season, but still leave sufficient time for a re-exam of some bulls, if needed.
- Allocate sufficient time on the day(s) of testing. It is a time consuming procedure and rushing too fast will frustrate both the producer and veterinarian, not to mention the bulls.
- A building must be provided to allow examination of the semen in an area protected from the weather and cold.
- The facilities should be designed and in adequate repair to allow easy handling of the bulls and to prevent injuries to the bulls and handlers. Bulls are extremely rough on fences and chutes. If they are allowed to escape, they may become completely unmanageable.

If an owner is having bulls classed by BSE for his own use, he may be able to use some bulls which would not be acceptable if they were to be presented for sale. In the sale situation, the veterinarian has an obligation to be sure they meet at least the minimum accepted requirements, as they are presented to potential buyers.